## EXHIBIT A

# AN ANALYSIS OF THE FANATICS.COM AND NFLSHOP.COM TERMS OF USE USER INTERFACE DESIGN

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### I. QUALIFICATIONS

I hold a Doctor of Philosophy (PhD) degree in Cognitive Science from Sussex University in the United Kingdom where I researched the psychology of user behavior for the design of large interactive displays. I also have a Master of Science (MSc) degree in Human-Centered Computer Systems from Sussex University. Since 2005, I have advised numerous organizations as a user experience specialist, including Spotify Technology, Pearson Education, HM Revenue & Customs, Smart Pension and The Telegraph, among others. In this capacity, I bring a set of methods and best practices for understanding user behavior and psychology, helping organizations design software to ensure it is clear and easy to use while considering the needs of the users and the business together. Additionally, in prior roles I have provided User Centered Design (UCD) training to organizations such as Nokia and British Airways. Attached to this preliminary analysis as Exhibit A is a true and correct copy of my resume.

I am perhaps best known for my work in coining the term "Dark Patterns"—which are deceptive design techniques used in websites and mobile applications ("Apps") to trick users into doing things unintentionally. For example, common Dark Patterns include imposing hidden costs that only appear at the last stage of a checkout process or making it unnecessarily difficult to cancel a subscription service in which the user did not intend to enroll. In 2010, I formed the website darkpatterns.org as part of an initiative to bring public awareness to common types of Dark Patterns and help stamp out deceptive design practices (recently rebranded to deceptive.design). My initiative has been successful, with the concept of Dark Patterns now being well known internationally. For example, Dark Patterns are cited in various books on design, ethics, and

privacy,<sup>1</sup> and they are researched by a number of academic researchers.<sup>2</sup> Dark Patterns are also defined in the upcoming EU Digital Services Act (DSA), the California Privacy Rights Act (CPRA) and the Colorado Privacy Act (CPA).

I have been cited as an expert on the subject of Dark Patterns by numerous media outlets, including The Wall Street Journal, Vox, The New York Times, The Financial Times, Gizmodo, The Atlantic, Fast Company, Ars Technica, British Broadcasting Corporation (BBC), and Consumer Reports. I have also published articles relating to Dark Patterns and deceptive design practices as set forth in my resume (see **Exhibit A**). I write this preliminary analysis in my capacity as an independent expert on Dark Patterns. My billing rate is \$300.00 per hour, and I have no direct financial interest in the outcome of this matter.

#### II. INTRODUCTION TO DARK PATTERNS

Dark Patterns are design techniques used in software user interfaces (such as e-commerce websites and Apps) that deceive, manipulate, and/or trick users into taking actions that they would not have otherwise taken if given a clear choice. In recent years, a growing body of research<sup>3</sup> has

<sup>&</sup>lt;sup>1</sup> Further details are available at: https://www.google.com/search?tbm=bks&q=darkpatterns.org.

<sup>&</sup>lt;sup>2</sup> *E.g.*, Assistant Professor Colin Gray at Purdue University, Professor Woodrow Hartzog at Northeastern University, Professor Lior J. Strahilevitz at The University of Chicago and more available at: https://arxiv.org/search/?query=%22Dark+patterns%22&searchtype=all&abstracts=show&order=-announced\_date\_first&size=50.

<sup>&</sup>lt;sup>3</sup> See Colin M. Gray et al., The dark (patterns) side of UX design, 2018-April in Conference on Human Factors in Computing Systems - Proceedings (2018). Jamie Luguri & Lior Strahilevitz, Shining a Light on Dark Patterns, SSRN Electron. J. (2019), https://papers.ssrn.com/abstract=3431205 (last visited Sep 21, 2020). Arunesh Mathur et al., Dark patterns at scale: Findings from a crawl of 11K shopping websites, Proceedings of the ACM on Human-Computer Interaction (2019). Colin M. Gray et al., The dark (patterns) side of UX design, 2018-April in Conference on Human Factors in Computing Systems - Proceedings (2018). Chris Nodder, Evil by Design, in Evil By Design: Interaction design to lead us into temptation (2013). Than Htut Soe et al., Circumvention by design - Dark patterns in cookie consent for online news outlets, in ACM International Conference Proceeding Series 1–12 (2020), https://dl.acm.org/doi/10.1145/3419249.3420132 (last visited Jan 5, 2021). Justin Hurwitz, Americans at Risk: Manipulation and Deception in the Digital Age. (Written Testimony of Justin

drawn connections between Dark Patterns and various theories of human decision making to explain the effectiveness of Dark Patterns and the harm that these practices cause.

### A. Categories of Dark Patterns

A number of researchers have put forward different taxonomies of Dark Patterns. In 2010, I identified the most common types of Dark Patterns that I found in Apps and on e-commerce websites, which can be found at www.darkpatterns.org.<sup>4</sup>

To date, the most comprehensive taxonomy of Dark Patterns was set forth by Mathur *et al.* in an academic research paper.<sup>5</sup> The Paper, which is titled, "Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites," is the first major quantitative academic study of Dark Patterns on popular shopping websites. In their research, Mathur *et al.* (2019) analyze approximately 53,000 product pages on 11,000 websites using a machine-learning algorithm. Their research resulted in finding 1,818 instances of Dark Patterns. Further analysis led them to classify the instances of Dark Patterns in a taxonomy, which are summarized in the table below (Table 1):

<sup>7</sup> 

Hurwitz) (2020), https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/010820 CPC Hearing Testimony Hurwitz.pdf. Christoph Bösch et al., *Tales from the Dark Side: Privacy Dark Strategies and Privacy Dark Patterns*, 2016 Proc. Priv. Enhancing Technol. 237–254 (2016). CASS R. SUNSTEIN, *Sludge Audits*, Behav. Public Policy 1–20 (2020), https://doi.org/10.1017/bpp.2019.32 (last visited Jan 5, 2021). Christoph Bösch et al., *Tales from the Dark Side: Privacy Dark Strategies and Privacy Dark Patterns*, 2016 Proc. Priv. Enhancing Technol. 237–254, http://c2.com/cgi/wiki (last visited Jul 3, 2020). Midas Nouwens et al., *Dark Patterns after the GDPR: Scraping Consent Pop-ups and Demonstrating their Influence*, in Conference on Human Factors in Computing Systems - Proceedings (2020), http://arxiv.org/abs/2001.02479 (last visited Feb 9, 2020).

<sup>&</sup>lt;sup>4</sup> Since then, other researchers have developed taxonomies of Dark Patterns including, among others: Conti and Sobiesk (2010), Gray *et al.* (2010), Zagal *et al.* (2013), and Bösch (2016).

<sup>&</sup>lt;sup>5</sup> Arunesh Mathur *et al.*, *Dark patterns at scale: Findings from a crawl of 11K shopping websites*, PROCEEDINGS OF THE ACM ON HUMAN-COMPUTER INTERACTION (2019).

| Category  | Туре                         | Description  | <b>Cognitive Biases</b>                         |
|---|------------------------------|--|---|
|   | Sneak into<br>Basket         | Adding additional products to users' shopping carts without their consent  | Default Effect                                  |
| Sneaking  | Hidden Costs                 | Revealing previously undisclosed charges to users right before they make a purchase  | Sunk Cost Fallacy                               |
|   | Hidden<br>Subscription       | Charging users a recurring fee under the pretense of a one-time fee or a free trial  | None  |
| Urgency   | Countdown<br>Timer           | Indicating to users that a deal or discount will expire using a counting-down timer  | Scarcity Bias                                   |
| orgency   | Limited-time<br>Message      | Indicating to users that a deal or sale will expire soon without specifying a deadline   | Scarcity Bias                                   |
|   | Confirmshaming               | Using language and emotion (shame) to steer users away from making a certain choice  | Framing Effect                                  |
|   | Visual<br>Interference       | Using style and visual presentation to steer users to or away from certain choices   | Anchoring & Framing Effect                      |
| Misdirecti<br>on  | Trick questions <sup>6</sup> | Using confusing language to steer users into making certain choices  | Default & Framing<br>Effect                     |
|   | Pressured<br>Selling         | Pre-selecting more expensive variations of a product, or pressuring the user to accept the more expensive variations of a product and related products | Anchoring &<br>Default Effect,<br>Scarcity Bias |
| Social  | Activity<br>Message          | Informing the user about the activity on the website (e.g., purchases, views, visits)  | Bandwagon Effect                                |
| Proof   | Testimonials                 | Testimonials on a product page whose origin is unclear   | Bandwagon Effect                                |
| Scarcity  | Low-stock<br>Message         | Indicating to users that limited quantities of a product are available, increasing its desirability  | Scarcity Bias                                   |
| Scarcity  | High-demand<br>Message       | Indicating to users that a product is in high demand and likely to sell out soon, increasing its desirability  | Scarcity Bias                                   |
| Obstructi<br>on   | Hard to Cancel               | Making it easy for the user to sign up for a service but hard to cancel it   | None  |
| Forced Action Forced Coercing users to create accounts or share their information to complete their tasks |                              | None   |   |

**Table 1**: Taxonomy of Dark Patterns based on evidence from 11,000 websites (Mathur *et al.*, 2019, p.12)<sup>7</sup>

<sup>6</sup> In this document, the broader term "trick wording" is used instead of "trick questions," since not all forms of linguistic trickery are phrased in question form.

<sup>&</sup>lt;sup>7</sup> As shown in the table, Mathur *et al.* draw an explicit connection between each type of Dark Pattern and the cognitive bias that it exploits. Mathur *et al.* provide the following list of cognitive biases that Dark Patterns exploit:

In this preliminary analysis, I focus principally on one type of deceptive Dark Pattern:

Visual Interference—which falls under the Misdirection category of Dark Pattern.

### i. The Misdirection category of Dark Patterns

**Misdirection** is a category of Dark Pattern that "uses visuals, language, and emotion to steer users toward or away from making a particular choice." (Mathur *et al.*, 2019). There are two main types of Misdirection: **Trick Wording** and **Visual Interference**, though I will only define "Visual Interference" in this document given its relevance to the subsequent analysis.

#### ii. The Visual Interference Dark Pattern

The **Visual Interference** Dark Pattern is another type of Misdirection. It involves "[u]sing style and visual presentation to steer users to or away from certain choices." (Mathur *et al.*, 2019) and it "purposefully focuses your attention on one thing in order to distract your attention from another." (Brignull, 2010).

In Figure 1 below, the airline Ryanair uses both types of Misdirection—**Trick Wording** and **Visual Interference**—to trick users into buying travel insurance. The Ryanair user is defaulted into purchasing travel insurance. However, from the dropdown box, which is labeled

<sup>•</sup> Anchoring Effect: The tendency of individuals to overly rely on an initial piece of information—the "anchor"—in future decisions (Tversky & Kahneman, 1974);

<sup>•</sup> Bandwagon Effect: The tendency of individuals to value something more because others seem to value it (Sherif, 1936);

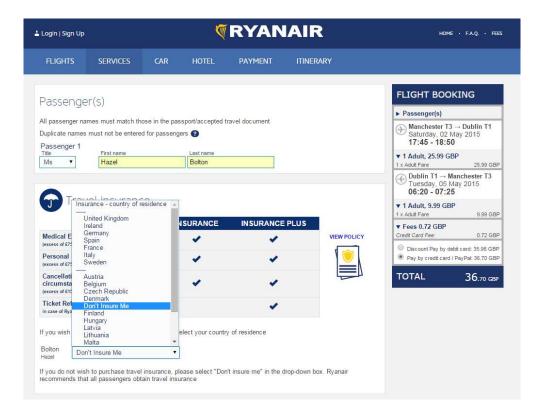
<sup>•</sup> Default Effect: The tendency of individuals to stick with options that are assigned to them by default due to inertia (Johnson et al. 2002);

<sup>•</sup> Framing Effect: The tendency of individuals to reach different decisions from the same information depending on how it is presented (Tversky & Kahneman, 1981);

<sup>•</sup> Scarcity Bias: The tendency of individuals to place a higher value on things that are scarce (Mittone & Savadori, 2009); and

<sup>•</sup> Sunk Cost Fallacy: The tendency of individuals to continue an action if they have invested resources into it, even if that action might make them worse off (Arkes & Ayton, 1999).

"Please select a country of residence," the choice to opt out of purchasing travel insurance, "Don't insure me," is hidden between the countries "Denmark" and "Finland."



**Figure 1:** A Deceptive Dark Pattern used by Ryanair in 2013, making it hard to opt out of an insurance upsell<sup>8</sup>

Ryanair tricks users by placing the opt-out choice between two countries. As a result, many consumers end up purchasing travel insurance because they are unaware that they may choose not to do so. By presenting the option in this manner, it is unlikely that the user will even see the option to opt out of travel insurance, and the user is therefore led to believe that she cannot opt out. In

<sup>&</sup>lt;sup>8</sup> Kyle Gawley, *Dark Patterns - The Art of Online Deception* (2013), https://blog.kylegawley.com/dark-patterns-the-art-of-online-deception/ (last visited Jul 4, 2020).

2015, this Dark Pattern led to Ryanair being fined €850,000 by the Italian Competition Authority (The ACGM).<sup>9</sup>

### B. How "scan reading" can be exploited in Dark Patterns

Numerous researchers have studied how humans tend to read content from screens when we are online. Put simply, when we read, we often do not read every word on every page—not unless we're studying something with a great deal of focus (e.g., a novel). The way we typically read online is called "scan reading." Figure 2 below provides an example of how we scan read:

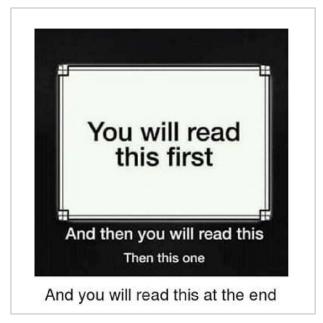


Figure 2: Demonstration of how human visual perception can be manipulated (Hurwitz, 2020<sup>10</sup>)

The figure above shows how we tend to let a natural visual hierarchy determine the order in which we read things. We tend to look at the big, prominent things first and smaller things later. Often, if a heading indicates that its associated content might be irrelevant to our current

9

<sup>&</sup>lt;sup>9</sup> AGCM - Autorita' Garante della Concorrenza e del Mercato, https://en.agcm.it/en/media/press-releases/2014/2/alias-2105 (last visited Jan 17, 2021).

<sup>&</sup>lt;sup>10</sup> Justin Hurwitz, Americans at Risk: Manipulation and Deception in the Digital Age. (Written Testimony of Justin Hurwitz) (2020),

goals, we might make an educated guess to skip that associated content and look elsewhere on the page to find a way to meet our goals as quickly and efficiently as possible.

Scan reading is not a skill we are born with—it is a skill we develop from practice.

Similarly, good writers and designers learn how to design 'for' scan reading, to help people do it more efficiently.

Steve Krug published 'Don't Make Me Think' in 2000. It's now in its second edition, with over 350,000 copies in print. This book is highly regarded in the design industry. It puts forward a clear explanation for the concept of scan reading by people who are using screens, shown in Figure 3, below.

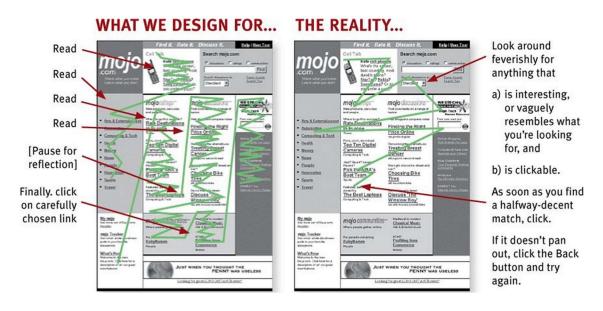


Figure 3: A depiction of the nature of scan reading (Krug, 2005)

The image on the left of Figure 3 explains what we might naively assume is a natural way to read information. In theory, we'd expect readers to take in each successive word, thoroughly paying attention to every element of the design. Economists refer to this idea as 'homo economicus'—the idea that humans have a limitless supply of attention, energy, and critical

thinking skills. This idea has been widely debunked, for example by Nobel Prize Winner Richard Thaler "Real people have trouble with long division if they don't have a calculator, sometimes forget their spouse's birthday [...]. They are not homo economicus; they are homo sapiens." <sup>11</sup>

The image on the right of Figure 3 shows how people actually read pages on the web. As Krug explains, "the user's reality is much closer to 'billboard going by at 60 miles an hour.'" Krug argues that users tend to "glance at each new page, scan some of the text, and click on the first link that catches their interest or vaguely resembles the thing they're looking for. There are usually large parts of the page that they don't even look at."

In 1997, academic researchers Morkes and Nielsen<sup>12</sup> did a quantitative empirical study in which 51 participants tested five variations of a website, each one with a different style of writing:

- 1. A 'promotional' writing style—full of 'marketese'
- 2. A 'scannable' writing style—intended to encourage scan reading
- 3. A 'concise' writing style—succinct content
- 4. An 'objective' writing style—not using promotional language
- 5. A combined concise, scannable and objective writing style

Each person was given a series of tasks, generally involving looking for the answer to a simple question. The amount of time they took was recorded, as were any errors they made. The findings showed that people performed worse on the 'promotional' style pages, but significantly better with the 'scannable' and 'concise' styles. If users read every word on every page in a systematic way, these differences wouldn't have been seen. In a subsequent article, Nielsen (1997)

<sup>&</sup>lt;sup>11</sup> Thaler, R. H., & Sunstein, C. R. (2008). Nudge: Improving decisions about health, wealth, and happiness. Yale University Press.

<sup>&</sup>lt;sup>12</sup> Morkes & Nielsen (1997) Concise, SCANNABLE, and Objective: How to Write for the Web https://www.nngroup.com/articles/concise-scannable-and-objective-how-to-write-for-the-web/.

addressed the question, "How do users read on the web?" with a two-word answer: "They don't." He went on: "People rarely read web pages word by word; instead, they scan the page, picking out individual words and sentences."<sup>13</sup>

Eye-tracking research is another useful source of insights about reading behavior. In 2014, Pernice, Whitenton, and Nielsen<sup>14</sup> ran an eye tracking study with over 300 participants. In one exercise, people were asked to use a search engine and find some specific information. Eye-tracking technology followed their progress, monitoring how they fixated on the page. 17% of the time, people looked at only one result before clicking onto the next page. They didn't fix their gaze anywhere else. In other words, they didn't read everything on the page—they instead picked the first thing that seemed relevant to their goal and clicked on it, leaving the page as quickly and efficiently as possible. This is a demonstration of a scan reading strategy. People are likely to choose the first link that seems to match their needs, rather than analyzing all the links available, in the hope that a different link might better meet their needs.

Well trained designers tend to have a fairly good understanding of the concept of scan reading. When a designer puts together a page, they typically employ a concept called "visual hierarchy" in which they rank the importance of content on the page, and they show the most important content most prominently. This assists users with scan reading. Similarly, writers are usually trained to use a principle called the "inverted pyramid"—ensuring that the most important information is stated at the beginning of a body of content, and the content proceeds with

<sup>&</sup>lt;sup>13</sup> Nielsen (1997), *How Users Read on the Web*, https://www.nngroup.com/articles/how-users-read-on-the-web/.

<sup>&</sup>lt;sup>14</sup> Pernice, Whitenton and Nielsen (2014), *How People Read Online: The Eyetracking Evidence*, https://www.nngroup.com/reports/how-people-read-web-eyetracking-evidence/.

explanatory and supporting details in the order of most to least important. Again, this assists users with scan reading.

However, not all designers have the users' best interests in mind. Instead of designing to help users to scan read more effectively, user interfaces and content can be created to hide information on the page, or make it look as though the page is saying one thing (e.g., through headings and subheadings) when in fact it is saying another. This harks back to the concept of "burying the lede," in which a journalist hides the most important and relevant parts of the story in the dense body copy rather than in the "lede" (a newspaper term for the summary that appears below an article title). Using terminology from Dark Patterns literature, this is known as a "Misdirection" or "Visual Interference" (see sections II(A)(i) and II(A)(ii)).

### III. INTRODUCTION TO RESPONSIVE WEB DESIGN

Today, modern websites are typically created to work "responsively." This means that the content and layout changes according to the user's browser "viewport" size and other settings. <sup>15</sup> "Viewport" is a technical term for the visible area of a web-page, which is primarily determined by the window size or device screen size. Fanatics.com and NLFshop.com are responsive websites that work in this manner.

For example, when you look at a responsive website on your iPhone or Android handset in portrait orientation you will notice that the content fits nicely to the width of the viewport. For example, you don't need to scroll horizontally to the right in order to see the end of a sentence. This is because the webpage contains rules that detect the viewport size and change the layout of the page accordingly, and because the web page allows the phone's web browser to "reflow" the

<sup>&</sup>lt;sup>15</sup> LePage, P., & Andrew, R. (2019, February 12), *Responsive web design basics*, Web.Dev, https://web.dev/responsive-web-design-basics/.

content in the available space. If you turn your phone on its side into landscape mode, you'll find that on a responsive website, the page layout changes to take advantage of the additional width.

Furthermore, modern browsers allow users to choose their preferred zoom level. If someone is short sighted, they might prefer to zoom the text to a larger size to make it easier to see. This effectively makes their viewport seem smaller, as the text takes up more space, and the content reflows downwards. This means that different people can open the same URL in their browser and see something rather different.

When a page first loads (before the user interacts with the page), the user can see a certain amount of the content within the viewport. In this context, the bottom of the viewport is known as "the fold," and the visible content is termed to be "above the fold". (The term "the fold" is inherited from traditional print newspapers).

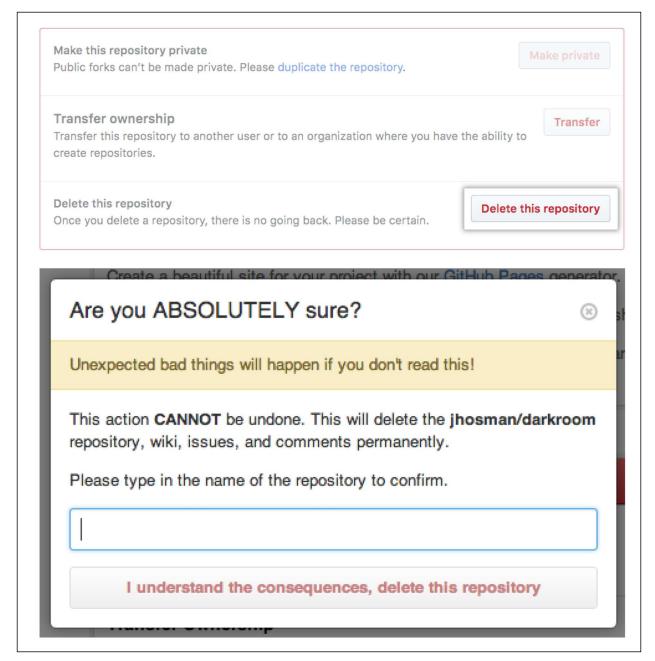
Also notable is the fact that mobile devices have a "virtual keyboard" that appears during text entry (e.g., when the user selects a text field in a form). The virtual keyboard usually covers the bottom portion of the user's screen, causing the viewport to shrink vertically. In other words, it causes "the fold" to move.

Responsive web design has been a popular approach to web design for over a decade—for example, Ethan Marcotte published a book on this topic in 2011. All of the concepts explained in this section have been well known since then. It is also worth emphasizing that cross-platform testing has long been considered a cornerstone of responsive web design practice. There are numerous tools that assist with or automate the work involved in cross-device testing, such as Browserstack.com, kobiton.com, headspin.io, browserling.com and sizzy.co.

<sup>&</sup>lt;sup>16</sup> Marcotte, E. (2011), Responsive Web Design, A Book Apart.

### IV. HOW WEBSITES CAN BE DESIGNED TO ENSURE USERS SEE CRITICAL CONTENT

In the previous two sections, I established that (i) typical users often "scan read" and don't read every word on every page; and (ii) web browsers often present content to users differently (depending on viewport size and text zoom), so that some content may not be rendered on screen before users proceed to the next page. These are well known issues, which is why web designers often employ user interface design techniques to ensure critical content gets presented to users. For example, Github.com provides a popular hosting service for software source code. If a user wants to delete a repository of source code on GitHub, this can have severe consequences, such as irrevocable loss of months or years of work. For this reason, GitHub designed a user interface that was sure to stop users "in their tracks" and force them to consider the impact of the action they are about to take. This is shown in Figure 4, below. After a user clicks "Delete this repository," they are shown a dialog box in which they are given a very clear explanation: "Are you ABSOLUTELY sure? Unexpected bad things will happen if you don't read this! This action cannot be undone. This will delete the {name} repository, wiki, issues and comments permanently. Please type in the name of the repository to confirm." The user cannot proceed with the deletion unless they type the name of the repository. If they type it incorrectly, or if they leave it blank, they are presented with an error message and they are required to fill it in correctly before they can proceed with the deletion.



**Figure 4:** The GitHub delete repository user interface <sup>17</sup>

Of course, GitHub can't be completely sure that every single user who proceeds through the deletion process has fully read and understood the message. However, GitHub made

<sup>&</sup>lt;sup>17</sup>https://docs.github.com/en/repositories/creating-and-managing-repositories/deleting-a-repository (captured August 14, 2022).

considerable efforts to mitigate the risk of users proceeding through this page without reading and understanding the message.

Another context in which organizations use design techniques to reduce the possibility of users overlooking a message is in the presentation of legal terms. When a user registers with an online service or installs a piece of software, they are typically required to agree to some legal terms. If an organization wants to be sure their users are fully aware of the legal terms, they can present the legal terms as a separate mandatory step in the process. This means that if a user wants to complete a process (such as registering, purchasing or installing), they have no choice but to see the document in question. This has been a common practice for decades and is still used frequently today, as shown in Figure 5, a screenshot of the Windows 95 setup process (1995), and Figure 6, a screenshot of the license agreement user interface for macOS Catalina, a version of Apple's desktop operating system for macOS computers (2019).

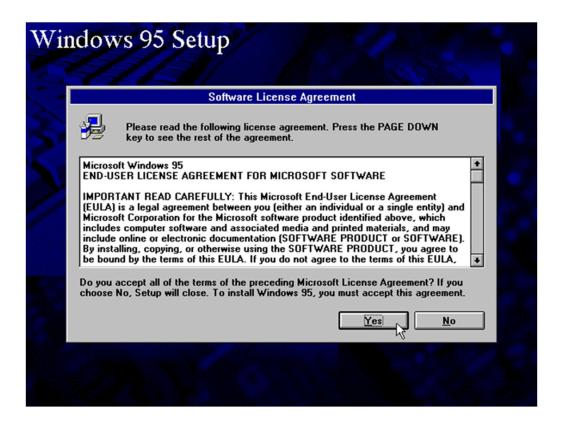


Figure 5: The Windows 95 license agreement user interface (source: guidebookgallery.org 18)

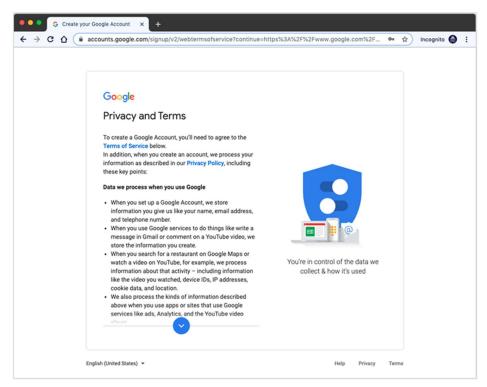


**Figure 6:** Screenshot of the macOS Catalina license agreement user interface (captured November 9, 2019)

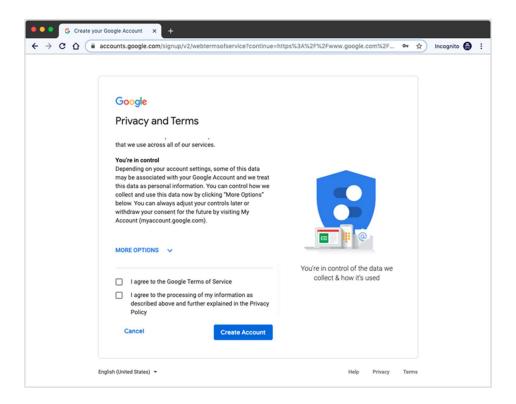
Some organizations make even greater efforts to ensure users are presented with their Terms of Use by implementing mandatory scrolling and opt-in checkboxes. For example, when signing up for an account with Google, the user is shown a summary of the privacy policy, communicating some of the most important aspects in concise, plain language. As shown in Figures 7 and 8 below, this summary is shown as a mandatory step in the sign-up process and the

<sup>&</sup>lt;sup>18</sup> Source: https://guidebookgallery.org/screenshots/win95 (captured August 14, 2022).

user is required to scroll through the summary then select two checkboxes (one for the Terms of Service and another for the Privacy Policy).



**Figure 7:** Google's sign-up process requires the user to scroll through the Privacy Policy summary (captured November 9, 2019)



**Figure 8:** Having scrolled to the bottom, the user must accept the Terms of Service and Privacy Policy (captured November 9, 2019).

In conclusion, there are numerous UI design techniques that can be employed to ensure users see and respond to key content such as "legal terms," and these techniques have been used in popular software for decades.

#### V. METHOD

My assignment was to evaluate two websites: fanatics.com and nflshop.com, closely analyzing the locations where users were exposed to the Terms of Use in the account creation and purchasing journeys. The primary research question was as follows: "Are the 'Terms of Use' presented in a manner that ensures a typical user will notice them when registering or making a purchase on fanatics.com or nflshop.com?"

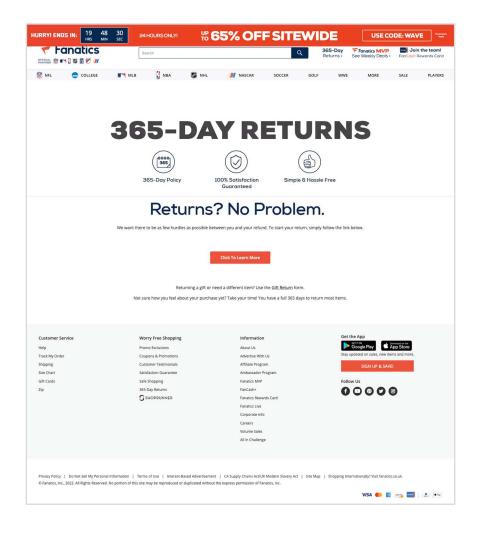
I used a VPN service to ensure my IP address was in the United States. No purchases were made—I stopped on the final checkout pages before submitting payment details.

On each of fanatics.com and nflshop.com, there were two pages of primary interest: the register page and the payment page. I took screenshots of these pages typically with different browsers and configurations). These screenshots are cataloged in **Appendix 1** and **Appendix 2**.

### VI. FINDINGS

### A. Although the Terms of Use link is in the page footers, many users will not be aware of its existence

In conducting a general analysis of fanatics.com and nflshop.com, I noticed that both websites have a link to the Terms of Use in the footer of every page. This is shown in Figure 9, below.



**Figure 9:** The Terms of Use link is shown in the footer of all pages on fanatics.com and nflshop.com (shown here as the third link from the left in the footer)

If a user is actively seeking out the Terms of Use (for example, if they are a lawyer who has great interest in this subject matter), this design may make it easier for them to find it. However, this argument does not apply to users who have other goals in mind. For example, if a user is trying to simply make a purchase, they have no reason to studiously read every piece of text on every page; it would take them too long. Instead, they are likely to scan read (see section II(B)). Also, because their viewport may not be tall enough to show the page footer (see section III), it is possible for a user to browse the website and make a purchase without ever having the footer text rendered on screen.

B. On the register and payment pages of fanatics.com and nflshop.com, the Terms of Use link is below the primary call to action button, meaning that users can proceed to the next page without the Terms of Use link ever appearing within their viewport

In section III, I explained the nature of responsive web design, viewports, browser text zoom, "the fold," and virtual keyboards. In section IV, I explained how the issue of users "not seeing" content on screen has been well known for a long time, and designers often use UI design techniques to make important content more prominent, or to stop users in their tracks and encourage them to carefully consider the content. Such UI design techniques were not used on fanatics.com or nflshop.com, specifically:

- Fanatics.com register page
- Fanatics.com payment page
- Nflshop.com register page
- Nflshop.com payment page

I was asked to carry out my investigation using 3 different devices and browsers:

- 1. iPhone XS with Safari browser
- 2. iPhone 11 with Google Chrome browser
- 3. A desktop browser

In order to take accurate screenshots for items 1 & 2 in the list above, I used a service called Browserstack.com. Browserstack.com is a testing platform that allows users to test websites using a wide array of devices, operating systems, and browsers, using screen-sharing technology. For item 3; the exact device and browser was not specified to me, so I selected a popular combination: a 13-inch MacBook (2015) with the most recent version of the Google Chrome browser.

For items 1 and 2 in the list above, I took a series of screenshots to show how the webpages appeared when loaded in the following different configuration statuses:

- Portrait orientation
- Landscape orientation
- Virtual keyboard visible
- Virtual keyboard hidden

All these combinations of pages, devices and configurations meant that a large number of screenshots were needed. These were recorded in a database. Each record of the database is presented as a page in **Appendix 1**. A summary of the key insights from this database is shown in Table 2, below.

| Website                           | Page     | Device                  | Portrait<br>orientation &<br>virtual<br>keyboard off | Portrait<br>orientation &<br>virtual<br>keyboard on | Landscape<br>orientation &<br>virtual<br>keyboard off | Landscape<br>orientation &<br>virtual<br>keyboard on |
|-----------------------------------|----------|-------------------------|--|---|---|--|
| Fanatics.com<br>or<br>nflshop.com | Register | iPhone XS<br>(Safari)   | ✓ TOU present  | X TOU hidden  | X TOU hidden  | X TOU hidden   |
| Fanatics.com<br>or<br>nflshop.com | Register | iPhone 11<br>(Chrome)   | ✓ TOU present  | X TOU hidden  | X TOU hidden  | X TOU hidden   |
| Fanatics.com<br>or<br>nflshop.com | Register | Macbook Pro<br>(Chrome) | Not applicable                                       | Not applicable                                      | ✓ TOU present   | Not applicable                                       |
| Fanatics.com<br>or<br>nflshop.com | Payment  | iPhone XS<br>(Safari)   | X TOU hidden   | X TOU hidden  | X TOU hidden  | X TOU hidden   |
| Fanatics.com<br>or<br>nflshop.com | Payment  | iPhone 11<br>(Chrome)   | X TOU hidden   | X TOU hidden  | X TOU hidden  | X TOU hidden   |
| Fanatics.com<br>or<br>nflshop.com | Payment  | Macbook Pro<br>(Chrome) | Not applicable                                       | Not applicable                                      | X TOU hidden  | Not applicable                                       |

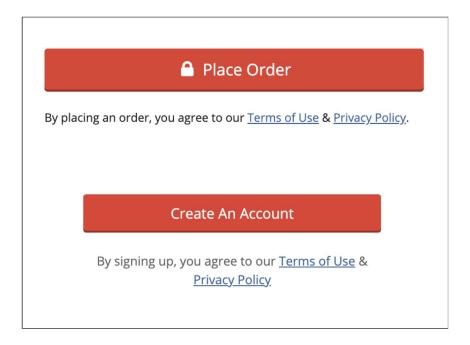
**Table 2:** An analysis showing whether the Terms of Use (TOU) is visible or hidden when the page loads, given different devices, browsers, and configurations

In Table 2, the label "TOU hidden" means that after the page loads, the user must scroll down in order for the Terms of Use (TOU) link to appear on screen within their viewport. The label "TOU present" means the opposite: that after the page loads, the Terms of Use link is already present within the user's viewport. It should be noted that although a page does not load with a virtual keyboard on—the user must tap on a text field to turn the virtual keyboard on, and they may turn the virtual keyboard off as they see fit—a mobile user must turn on the virtual keyboard in order to fill in the mandatory text fields needed to register or complete the purchase. In other words, the virtual keyboard is not initially present and not present for the entire time the user views

the page—but even so, it "gets in the way" during the time in which the user is most focusing on the page and makes the viewport rather small.

Table 2 shows that in most cases, the Terms of Use link is hidden from view when the page loads and/or when the virtual keyboard gets turned on. This means the user must choose to scroll down the page in order for it to be presented on screen.

Importantly, on both nflshop.com and fanatics.com, the Terms of Use link is always presented below the main call to action button. On the register page, this is the red "Create an account" button. On the payment page, this is the red "Place order" button. <sup>19</sup> This is shown in Figure 10, below.



<sup>&</sup>lt;sup>19</sup> As an aside, there is another "Place order" button that appears at the bottom of the payment page when viewed on a narrow viewport (e.g., on iPhone), giving two "Place order" buttons on the page in this situation. This was not relevant to my analysis, so it is not discussed in this report.

**Figure 10:** Excerpt from the payment page on fanatics.com (top) and from the register page on fanatics.com (bottom). The layouts are the same on nflshop.com

This means that the user can proceed forward onto the next page without ever scrolling down far enough for their browser to display the Terms of Use link. Scrolling to the bottom of a page is not mandatory—it is entirely optional. This means that some users will create an account or place an order without being aware that a legal agreement contained in the Terms of Use exists.

This raises the question of whether these users have truly agreed to the Terms of Use. If a user was never presented with the Terms of Use link on screen, and they were able to complete a purchase or create an account without scrolling below the fold, then, by logical deduction, it is reasonable to conclude that they have not agreed or consented to the Terms of Use if they were not presented with those terms in the first place.

This is before we even get into the analysis of whether the Terms of Use link is presented prominently enough for a typical user to notice it even if they scroll down the page far enough, or if their viewport is big enough to show it. This analysis is covered in section VI(C), below.

In conclusion, had the National Football League Inc. ("NFL") and Fanatics Inc. ("Fanatics") wished to make the Terms of Use link more likely to be seen and read by users, they could have used one of the techniques shown in section IV—i.e. to present the Terms of Use prominently in a mandatory step prior to account creation or purchase completion, potentially also with a checkbox or radio button that the user must select in order to acknowledge that they have seen the document. It is notable that NFL and Fanatics did not choose to do this, and instead made the opposite choice—to present the Terms of Use link below the primary button on the register page and the payment page, allowing some users to proceed through account creation or purchase completion without ever having the Terms of Use link displayed to them on screen.

C. On the register and payment pages of fanatics.com and nflshop.com, the small font size and text color contrast made the Terms of Use link difficult to notice and read

Visual characteristics can make things eye-catching for human visual perception. If something is relatively large or high contrast it becomes eye-catching and is more likely to be noticed and understood. If it is relatively small or low contrast, it becomes less so.

On August 12, 2022, I visited the websites fanatics.com and nflshop.com, and I proceeded to the register and payment pages:

- https://fanatics.com/payment
- https://fanatics.com/register
- https://www.nflshop.com/payment
- https://www.nflshop.com/register

On each of these pages, I examined the font formatting and text contrast of the Terms of Use link against other text on the page. I calculated the text contrast ratio using WebAIM's Color Contrast Checker, a free tool commonly used for evaluating the contrast and color accessibility of a web page for WCAG (Web Content Accessibility Guidelines) compliance purposes.<sup>20</sup> My full findings are shown in **Appendix 2**. A summary of the findings is shown in the subsections below.

i. Text size and color contrast on the payment page of fanatics.com and nflshop.com

Figure 11 below shows a screenshot of the fanatics.com payment page:

<sup>&</sup>lt;sup>20</sup> Available at: https://webaim.org/resources/contrastchecker/.

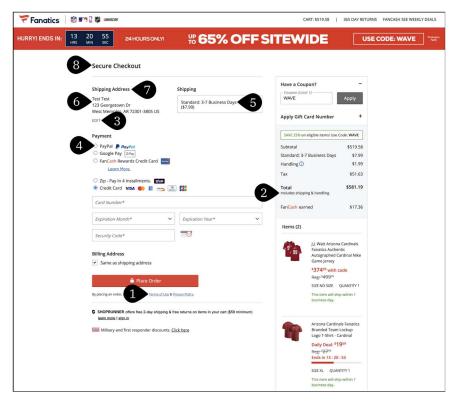


Figure 11: The fanatics.com payment page (marked with numbers that correspond to table 3)

Table 3 shows the font sizes and color contrast for a variety of elements on the fanatics.com payment page and nflshop.com payment page. The font sizes and colors were identical on the payment pages for both sites. Both websites use "responsive typography" rules, so that when a viewport is under a certain size, some of the text becomes slightly bigger—though for the subject pages the Terms of Use link stays at the same size. This is shown in the table below. "Font size at 1440w" refers to a browser viewport that is 1440 pixels wide (typical for a MacBook laptop) and "Font size at 414w" refers to a browser viewport that is 414 pixels wide (typical for an iPhone 11). No other responsive font sizes were found during the analysis.

|   | Text analyzed                                     | Font size at<br>1440w | Font size at 414w | Foreground color | Background color | Contrast ratio |
|---|---|-----------------------|-------------------|------------------|------------------|----------------|
| 1 | Terms of Use link ("Terms of Use")                | 10.8px                | 10.8px            | #3863A3          | #FFFFFF          | 6.03:1         |
| 2 | Footnote ("Includes shipping & handling")         | 12px                  | 12px              | #242424          | #F5F6F8          | 14.35:1        |
| 3 | Edit link ("EDIT")                                | 13px                  | 13px              | #3863A3          | #FFFFFF          | 6.03:1         |
| 4 | Payment radio buttons (e.g., "PayPal")            | 14px                  | 16px              | #242424          | #FFFFFF          | 15.52:1        |
| 5 | Shipping dropdown ("Standard: 3-7 business days") | 14px                  | 16px              | #242424          | #FFFFFF          | 15.52:1        |
| 6 | Address content                                   | 14px                  | 16px              | #242424          | #FFFFFF          | 15.52:1        |
| 7 | Subheadings (e.g., "Shipping address")            | 15px                  | 18px              | #242424          | #FFFFFF          | 15.52:1        |
| 8 | Page heading ("Secure<br>Checkout")               | 20px                  | 20px              | #242424          | #FFFFFF          | 15.52:1        |

**Table 3:** Fanatics.com payment page and nflshop.com payment page—font size and color contrast

As you can see in Table 3, the Term of Use link was 10.8px. This was the smallest font size used on the page. Furthermore, the Terms of Use link had a relatively low contrast ratio, being just 6.03:1. Most other elements on the page had a higher contrast ratio. Because it was relatively small and low contrast, the Terms of Use link was among the hardest text to see on the entire page. For this reason, typical users may have simply not noticed the text, or they may have skipped over it while scan reading, assuming the diminutive size and contrast was intended to communicate that it was not necessary to dwell on and read.

Had NFL and Fanatics wished to make the Terms of Use link more likely to be seen and read by users, they could have made the font larger and used a higher contrast

foreground/background color for the text. It is notable that NFL and Fanatics did not choose to do this, and instead made the opposite choice—to make the Terms of Use link text to be among the smallest and the lowest contrast text on the page.<sup>21</sup>

### ii. Text size and color contrast on the register page of fanatics.com and nflshop.com

Table 4 shows the font sizes and color contrast for a variety of elements on the fanatics.com register page and nflshop.com register page. The font sizes and colors were identical on the register pages for both sites. Both pages use "responsive typography" that works in the manner described in section VI(C)(i) above.

| Text Analyzed                        | Font Size<br>at 1440w | Font Size at 414w | Foreground<br>Color | Background<br>Color | Contrast<br>Ratio |
|--------------------------------------|-----------------------|-------------------|---------------------|---------------------|-------------------|
| Footer navigation e.g., "About us"   | 12px                  | 12px              | #242424             | #F4F5F5             | 14.21:1           |
| Terms of use link                    | 13px                  | 13px              | #3863A3             | #FFFFFF             | 6.03:1            |
| Already a member? LOG IN link        | 14px                  | 14px              | #686868             | #FFFFFF             | 5.57:1            |
| Input placeholder e.g., "First Name" | 14px                  | 18px              | #767676             | #FFFFFF             | 4.54:1            |
| REGISTER page heading                | 16px                  | 16px              | #242424             | #FFFFFF             | 15.52:1           |

Table 4: Fanatics.com register page and nflshop.com register page—font size and color contrast

The most notable insight from the table above is the fact that the Terms of Use link is smaller than most of the other content on the page (aside from the footer navigation text), and it is also not the highest contrast text on the page (the "REGISTER" page heading and Footer navigation were both substantially higher contrast).

<sup>&</sup>lt;sup>21</sup> I was unable to quantify the size and contrast of the "Learn More" text that appears next to the "FanCash" payment option, because it is rendered as an image instead of HTML and CSS. However, it appears to the naked eye that Fanatics has chosen to display the link for consumers to "Learn More" about Fanatics' credit card more prominently than the Terms of Use link.

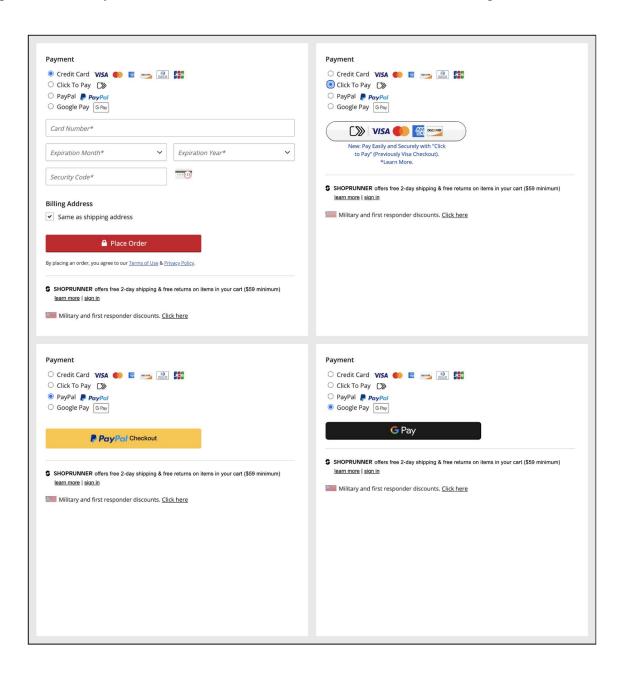
Additionally, when I reviewed the Declaration of Stephanie Flinchbaugh, I noticed that on page 9 she provided a screenshot of the Register page, which she described as "on the Fanatics website since at least February 2017 and on the NFL Shop website since at least April 2016." I noticed that in the screenshot she provided, the link for "Terms of Use" was gray text on a white background—unlike the more recent screenshot I took which was blue text on a white background. Although it is not possible to judge accurately from the screenshot, it appears that the color may have been #686868 on a background color of #FFFFFF (i.e., the same as the "LOG IN" link shown in table 4 above). If this is correct, this means that for a period between the dates she stated and August 2022 when I took the screenshot, the websites used a very low contrast color combination for the Terms of Use link (just 5.57:1, which is the lowest contrast text on the page).

In summary, NFL and Fanatics chose to design the Terms of Use link to be smaller and lower contrast than other text on the register page. The effect of this design choice was to make it less likely for a user to notice and read the Terms of Use link—and in turn, less likely to click the link and see the associated Terms of Use document.

D. When a user chooses to checkout via any method other than credit card, they are not shown the Terms of Use link immediately below the "Place Order" button on the payment page

The payment options area of the Payment page is functionally identical on nflshop.com and fanatics.com. When I selected each of the radio buttons for the payment method (PayPal, Google Pay, Click to Pay), I noticed that a Terms of Use link is visible below the "Place Order" button when the Credit Card option is selected. When any of the other options are selected, this Terms of Use link disappears.

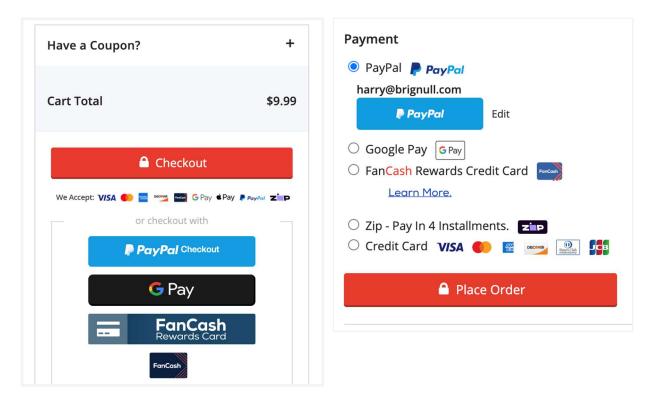
This gives another way in which a user may never be presented with the Terms of Use link. Specifically, the user may arrive on the payment page (of either nflshop.com or fanatics.com) and the Terms of Use link may not be visible when the page loads, because it is below the fold. If the user then selects "Click to Pay," "PayPal," or "Google Pay," this means that the Terms of Use link will never be presented to them. You will notice that the Terms of Use link is only present in the top left screenshot with the "Credit Card" radio button selected. The Terms of Use link is not present when any of the other radio buttons are selected. This is shown in Figure 12, below.



**Figure 12:** Payment option radio buttons on the payment page for both nflshop.com and fanatics.com

It should be noted that although there is a Terms of Use link at the very bottom of the Payment page on both websites, typical users may never see this link as they have no reason to scroll down that far. This is explained in section VI(A).

Furthermore, there is another way a user can make a purchase using PayPal. On the checkout page (the page the user sees prior to the payment page) there is a button labeled "PayPal Checkout" (Figure 13, left). If the user clicks this button, they are taken through some steps in a pop-up window on the paypal.com website. When they complete those steps, they are taken to the payment page with the PayPal radio button preselected (Figure 13, right), and the Terms of Use link is not visible below the place order button. It is possible that the other payment options shown in Figure 13 have the same behavior (G Pay, FanCash Rewards Card, FanCash) but I did not test them.



**Figure 13:** Left: checkout page with PayPal Checkout button visible. Right: payment page after the user clicked the PayPal Checkout button. Note that the Terms of Use link is not visible

### E. How the use of pressure selling techniques is likely to have driven typical users to rush through the purchasing process

The websites fanatics.com and nflshop.com use a number of pressure selling techniques. For example, the websites use (i) a free shipping countdown timer (ii) a daily deal countdown timer and (iii) a loading page that sometimes says, "PRICE LOCKED IN For A Limited Time Only!"

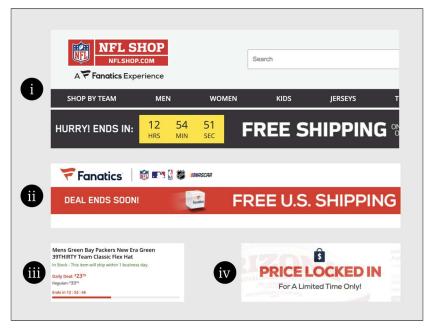


Figure 14: Pressure selling techniques observed on nflshop.com and fanatics.com.<sup>22</sup>

When considered in isolation, these pressure selling techniques are not excessive and are unlikely to lead to an outcome of harm for consumers. Such techniques are frequently used by

All screenshots captured on August 14, 2022. Screenshot (i) source: https://www.nflshop.com/cart; Screenshot (ii) source: https://www.fanatics.com/nfl/arizona-cardinals/aj-green-arizona-cardinals-fanatics-authentic-autographed-white-panel-football; Screenshot (iii) source: https://www.nflshop.com/green-bay-packers/mens-green-bay-packers-new-era-green-39thirty-team-classic-flex-hat/t-14150221+p-7829221739940+z-9-4138422941;

online retailers and are not controversial on their own unless they are faked.<sup>23</sup> However, when considered in the broader context of this analysis, they serve to further obscure the Terms of Use disclosure. Specifically, the websites use pressure selling techniques to rush through the purchasing process while simultaneously making the Terms of Use link hard to notice (as explained in sections VI(B)-(D)). This means that typical users are even less likely to notice the Terms of Use link.

### VII. SUMMARY AND CONCLUSIONS

#### A. Summary

| Section  | Summary   |
|--|---|
| Introduction<br>to Dark<br>Patterns            | Dark Patterns are design techniques used in software user interfaces (such as e-commerce websites and Apps) that deceive, manipulate, and/or trick users into taking actions that they would not have otherwise taken if given the choice, clearly stated.  |
|  | The type of Dark Pattern relevant to this analysis is a type of Misdirection called "Visual Interference." This involves using style and visual presentation to steer users to or away from certain choices.  |
|  | When people read content online, we often do not read every word on every page. Instead, we tend to skip around the content, hunting for chunks of information that will help us finish our task as efficiently as possible. This is called "scan reading." Generally, if a user finds a link or button that they feel will help them reach their objective, they will click it and leave the page without reading anything further on that page. |
| Introduction<br>to<br>Responsive<br>Web Design | "Responsive web design" is a common technique used in web design today. It involves building web-page layouts that adapt to fit the wide range of different devices on the market (Smartphones, tablets, laptops, etc.). Numerous tools are available to assist with testing, such as browserstack.com, which shows developers how their designs appear on the screens of many different devices. It is well known that responsive web design     |

Screenshot (iv) source (taken after "Add to Cart" was clicked) bhttps://www.fanatics.com/nfl/arizona-cardinals/james-conner-arizona-cardinals-fanatics-authentic-autographed-white-panel-football/o-4616+t-03604586+p-04585720112+z-9-2614103631.

<sup>&</sup>lt;sup>23</sup> I am working on the assumption that pressure selling techniques used here are not "faked" (for example, I am assuming that when the timer gets to zero, it does not instantly start counting down from the top again, to give a never-ending sense of pressure without any time limit). I have not carried out an investigation to verify this assumption.

|   | requires users with smaller screens to scroll more, and that less appears on screen for users with small viewports than those with large viewports.  |
|---|--|
| How Websites Can Be Designed to Ensure Users See Critical Content | It has long been understood how to design websites to ensure that users see critical content. For example, legal terms can be presented as a mandatory step before the user is able to complete the activity (such as installing, registering, or paying). Also, clearly labeled, mandatory radio buttons or checkboxes can be used to ensure users explicitly indicate that they understand the implications of proceeding to the next step. This has been a common practice since the 1990s. |
| Findings (A)  | NFLshop.com and fanatics.com both use responsive web design, which means that users who have small devices (e.g., iPhones) must scroll a great deal to get to the bottom of some pages. Although the Terms of Use link is in the footer of all pages on both websites, most users have no reason to scroll down that far. For example, purchasing and registering can be done without ever scrolling to the bottom of any pages.   |
| Findings<br>(B)   | On the register and payment pages of both websites, the Terms of Use link is below the primary call to action button, meaning that users can proceed to the next page without the Terms of Use link ever appearing within their viewport.  |
| Findings<br>(C)   | If a user happens to have a large viewport, or if they happen to scroll far enough down the register or payment page of either website, the Terms of Use link is presented on their screen. However, both websites use a relatively small font size and relatively low contrast text on those pages. This means that users might not notice the Terms of Use link when it is presented on screen.  |
| Findings<br>(D)   | When a user chooses to checkout via any method other than credit card, they are not shown the Terms of Use link immediately below the "Place Order" button on the payment pages of either website.   |
| Findings<br>(E)   | Pressure selling techniques are used on both websites. This may have driven typical users to rush through the purchasing process—making them even less likely to notice the Terms of Use link on the Payment or Register page.   |

### **B.** Conclusions

I began this analysis with the following research question in mind:

"Are the 'Terms of Use' presented in a manner that ensures a typical user will notice them when registering or making a purchase on fanatics.com or nflshop.com?"

Based on the findings reported in section VI, the simple answer is "no." I conclude that NFL and Fanatics employ the "Visual Interference" Dark Pattern on the websites nflshop.com and fanatics.com making it unnecessarily hard for users to see and read the Terms of Use.

The websites nflshop.com and fanatics.com are designed in a way that makes it unnecessarily hard for users to have the Terms of Use link presented to them on their device's screen. The design often requires the user to scroll below the point at which they need to in order to create an account or place an order. Given the way users typically scan-read, it's likely that users will press the "Create an Account" or "Place Order" button without ever scrolling down far enough to have the Terms of Use link presented to them on screen.

Even if a user does scroll down far enough or if their viewport is large enough, the pages are designed to present the Terms of Use link using a small font and low contrast text—making it unnecessarily hard for those users to see.

It has long been understood how to design websites to draw users' attention to important content. For example, in the Windows 95 installer (1995), users are forced through a mandatory step where they are shown the Windows license agreement. Similarly, Google (2019) uses a mandatory step, mandatory checkboxes, and mandatory scrolling, as a "triple whammy." NFL and Fanatics ignored all this precedent and instead made numerous design choices to make users less likely to be aware of the existence of the Terms of Use.

\* \* \*

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed this 25 day of August 2022 in Uckfield, East Sussex, England.

Harry Brignull

Hang RM.